

Application Serial No.: 10/753,896
Amdt. dated July 15, 2005
Reply to Office Action of April 20, 2005

REMARKS/ARGUMENTS

The Office Action dated April 20, 2005 and the reference cited therein have been carefully considered. In response to the Office Action, Applicants have amended Claim 1, which, when considered with the remarks set forth below, are deemed to place the case in condition for allowance. As a result of the present Amendment, Claims 1-12 remain in the case for continued prosecution.

In the Office Action, Claims 10-12 have been allowed. Applicants thank the Examiner for his indication of allowable subject matter.

Also in the Office Action, Claims 1-9 have been rejected under 35 U.S.C. §112, second paragraph, as being indefinite. Specifically, the Examiner states that the limitation "the valve member" in lines 14-15 has insufficient basis. Applicants respectfully disagree in that "a valve member" is recited earlier in Claim 1 in lines 6-7. Accordingly, Applicants request withdrawal of the rejection under 35 U.S.C. §112, second paragraph.

Further in the Office Action, Claims 1-9 have been rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,836,750 to Cabuz. In particular, the Examiner states that the Cabuz reference discloses an electrostatic microvalve comprising a partition, valve chambers, throughducts, valve members, and an electrostatic drive which is capable of functioning as claimed.

In response, Applicants have amended Claim 1 to more clearly define a microvalve having a partition separating a first and second valve chamber from each other and having a through duct extending through the partition connecting the first and second valve chambers. The microvalve further includes a valve member arranged in the first valve chamber, which by means of an electrostatic drive is able to be switched over between an open position clear of a first duct opening of the through duct and a closed position closing the first duct opening. In the open position, the valve member permits a transfer of fluid from the second valve chamber into the first valve chamber. The microvalve further includes a control member arranged in the second valve chamber which is associated with the second duct opening. The

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control member is able to be actuated by a further electrostatic drive between a neutral position and a control position while the valve member assumes its open position. In its neutral position, the control member frees the second duct opening, and in its control position, the control member at least partly closes the second duct opening in order to reduce the flow force acting on the valve member to facilitate switching over of the valve member into the closed position.

It is respectfully submitted that the Cabuz reference does not teach or suggest a control member independently movable while the valve member is in its open position to reduce the flow force acting on the valve member, as defined in amended Claim 1. Accordingly, it is respectfully submitted that Claim 1, and the claims that depend therefrom, patentably distinguish over the prior art.

In particular, the Cabuz reference discloses a device that operates in a completely different manner than the microvalve of the claimed invention. In fact, this reference is not directed to a microvalve, but rather to a micropump arrangement. More specifically, the Cabuz reference discloses an arrangement of cells and a method of pumping fluids peristaltically between adjoining cells utilizing diaphragms disposed within the cells. (See col. 6, lines 65-67.) The diaphragms are able to be actuated only in a fixed relation to transfer fluid between the cell chambers. Indeed, the significance of moving the diaphragms together is stated in col. 7, lines 10-33 of the Cabuz patent. This simultaneous movement of the diaphragms causes coordinated opening and closing of the lateral and vertical conduits to effect fluid flow from one chamber to the other.

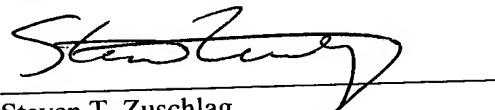
Hence, assuming the centerline of the valve chambers shown in Figure 3 of the Cabuz patent constitutes a partition, as defined in Claim 1, it is clear from col. 7, lines 10-33 that the diaphragms move together with respect to the partition to assume an "up" position, as shown in the left chambers of Figure 3, or a "down" position, as shown in the right most chambers of Figure 3. In other words, a diaphragm located above the partition cannot be moved to an "up" position while the corresponding diaphragm located below the partition is in a "down" position. Thus, the diaphragms do not move independently of each other.

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Therefore, the Cabuz reference does not disclose a control member that is actuated independently from a valve member to reduce the flow force acting on the valve member. Indeed, there is no mention at all in the Cabuz patent of attempting to reduce flow forces acting on the diaphragms. More particularly, the Cabuz reference does not teach or suggest a control member that is movable while a separate valve member is maintained in an open position to facilitate switching over of the valve member, as defined in amended Claim 1. Accordingly, it is respectfully submitted that Claim 1, as amended, and the claims that depend therefrom patentably distinguish over the Cabuz patent.

In view of the foregoing amendment and remarks, favorable consideration and allowance of the application with Claims 1-12 are respectfully solicited. If the Examiner believes that a telephone interview would assist in moving the application toward allowance, he is respectfully invited to contact the Applicants' attorney at the telephone number listed below.

Respectfully submitted,



Steven T. Zuschlag
Registration No.: 43,309
Attorney for Applicant

HOFFMANN & BARON, LLP
6900 Jericho Turnpike
Syosset, New York 11791-4407
(516) 822-3550
STZ:sbs

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